Claim Rejections under §112:

Claims 11, 13, 19 and 20 are rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In particular, Claim 19 is rejected for containing indefinite term "LC". Claims 11, 13, and 20 are rejected for containing the phrases "differing by value of phase shift" and "value of direction of fast optical axis". Claims 11, 13 and 20 are rejected for containing "and/or".

Claim 19 is amended by replacing "LC" with "liquid crystal". Claims 11 and 20 are amended by replacing "differing by value of phase shift and/or direction of fast optical axis" with a generic term "optical properties". New dependent Claims 21 to 26 are added to recite the features of "differing by value of phase shift and/or direction of optical axis" respectively.

Claim 13 does not contain any indefinite terms as stated in the Office action.

The terms "phase shift" and "direction of optical axis" are terms of art and widely used in the decorative material industries. According to New Webster Dictionary, the term "optical axis" refers to a line or direction through a double-refracting crystal along which a ray of light undergoes no double refraction. In the art the term "phase shift" means a shift of phases of an ordinary and an extraordinary beams when the light is propagated along the optical axis.

Reconsideration of Claims 11, 13, 19 and 20 under 35 U.S.C. §112, second paragraph are respectfully requested.

Claim Rejections under §103:

Claims 11-13 and 16-19 are rejected under 35 U.S.C. §103(a) as being unpatentable over WO 96/26462 to Broer et al (hereafter "Broer") in view of U.S. Patent No. 5,438,421 to Sugarawa et al (hereafter "Sugarawa"). Claims 11-13 and 16-19 are further rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,528,400 to Arákawa (hereafter "Arakawa") in view of Sugawara. Applicant respectfully traverses the rejections.

To establish a prima facie case of obviousness under 35 U.S.C. 103(a), there must be first some suggestion or motivation, whether in the references themselves, or in the knowledge generally available to one of ordinary skill in the art to modify the reference teaching. Second, there must be a reasonable expectation of success. Third, the prior art references must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on

applicant's disclosure. Applicant respectfully submits that a prima facie case of obviousness is not established and the present Claims 11-13 and 16-19 are allowable.

Claim 11 is directed to a decorative material which comprises two polarizers and at least one phase-shifting plate placed between the polarizers. The phase-shifting plate represents a continuous layer of an optically anisotropic material containing regions differing by optical properties. As recited in dependent Claims 21-23, the continuous layer of the optically anisotropic material contains regions differing by value of phase shift, or by value of direction of optical axis, or by value of both phase shift and direction of fast optical axis. Claim 13 recites a decorative material comprising two palorizers and at least one phase shifting plate placed between the polarizers wherein at least one of the polarizers contains several elements differing by directions of their polarization axes.

Broer describes a liquid crystal display device comprising a liquid crystal layer cell having a liquid crystal material between two substrates provided with electrodes. While Broer describes an optically anisotropic layer disposed between the two substrates, Broere does not disclose *a continuous layer of an optically anisotropic material containing regions differing by optical properties, such as phase shift and direction of optical axis.*

Sugawara describes an *orientation film* for a liquid crystal display. The orientation film of Sugawara is formed on a substrate and comprises a plurality of irregular, asymmetric repeated ridges having sawtooth or curved surfaces. However, Sugawara does not teach a decorative material as recited in Claim 1 of the present invention which comprises two polarizers and at least one phase-shifting plate placed between the polarizers.

There is no teaching or suggestion that motivates one of ordinary skills to combine Broer and Sugawara. Even assume one of ordinary skills would combine the two references, the combination could not arrive at the decorative material as recited in Claim 11. Neither Broer nor Sugawara is directed to the same technical field as the present invention. Broer and Sugawara relate to *liquid crystal displays.* The present invention is directed to a *decorative material.* Applicant respectfully submits that liquid crystal display and decorative material are not analogous technical fields. Claim 11 of the present invention recites a decorative material that can create an optical effect in any circumstances while Broer and Sugawara relate to a liquid crystal display that serve as an optical device only under voltage.

Moreover, the liquid crystal materials in the liquid crystal displays of Broer and Sugawara are *in liquid state*. In contrast, the continuous layer of the anisotropic material of Claim11 is in form of a phase shifting *plate, rather than in liquid state* as in Broer and Sugawara. The phase shifting plate of the present invention is *made from* a material in liquid crystalline phase, but is in a solid *plate* state in the decorative material. The combination of Broer's liquid crystal display with Sugawara's orientation film can only arrives at *a liquid crystal display* with arguably improved viewing angle, contrast and liquid crystal layer orientation due to the orientation film having the curved surfaces. However, the combination cannot arrive at a *decorative material* that has decorative effect in any circumstances.

Arakawa describes a *liquid crystal device* comprising a liquid crystal layer cell having TN liquid crystal. While Arakawa describes an optically anisotropic film disposed between two substrates, Arakawa does not disclose *a continuous layer of an optically anisotropic material containing regions differing by optical properties, such as phase shift and direction of optical axis*. For the same reasons as applied to Broer and Sugawara, there is no teaching or suggestion that motivates one of ordinary skills to combine Arakawa with Sugawara. Even assume one of ordinary skills would combine the two references, the combination would not arrive the decorative material as recited in Claim 11.

Furthermore, the Office action does not indicate whether any prior art reference describe a decorative material as recited in Claim 13 of the present invention which comprises at least one *polarizer* containing *several elements differing by directions of their polarization axes.* In fact, none of Broer, Sugawara and Arakawa describe a decorative material as recited in Claim 13 which comprises two polarizers and at least one phase-shifting plate *wherein at least one of the polarizers contains several elements differing by directions of their polarization axes.* Accordingly, Claims 16-19, which further recite limitations to Claim 13 particularly with respect to the *polarizer* containing several elements differing by directions of polarization axes, are patentable over Broer, Sugawara and Arakawa, either singularly or in combination.

Reconsideration of the rejections under 35 U.S.C. 103(a) of Claims 11-13 and 16-19 over Broer, Sugawara, and Arakawa is therefore respectfully requested.

Rejections Withdrawn:

Applicant acknowledges with thanks the Examiner's indication of withdrawing rejections under 35 U.S.C. 102 over Makow and under 35 U.S.C. 103 over Makow and Jones et al in view of Applicant's response to the first office action.

Applicant also notices that Claims 14-15, and 20 stand unrejected under 35 U.S.C. 102 and 103 in the Office action. Applicant respectfully submits that Claims 14-15, and 20 are patentable over the cited prior art. In particular, none of the cited art describe a decorative material recited in independent Claim 20 which comprises a polarizer, *a reflecting layer* and at least one phase shifting plate placed between the polarizer and the reflecting layer.

New Claims 21-26:

Dependent Claims 21-26 are added according to the Examiner's suggestion to recite limitations to the optical properties as recited in independent Claims 11 and 13. These optical properties include phase shifting and direction of optical axis. Applicant respectfully submits that Claims 21-26 are allowable as they are depended upon allowable independent Claims 11 and 13 respectively.

Attached hereto is a marked-up version of the changes made to the claims and the specification by the current amendment. The attached page is captioned "Version with markings to show changes made".

Based on the foregoing, Applicant respectfully submits that the application is now in condition for allowance. If any matters can be resolved by telephone, the Examiner is invited to call the undersigned attorney at the telephone number listed below. The Commissioner is authorized to charge any additional fees to Deposit Account No 502319 (Order No. A-70977/AJT).

Respectfully submitted,

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

In the Specification:

On page 5, please amend the text between lines 4 and 6 as follows:

A polarization coating with variable orientation of the polarization axis can be formed by known methods described in patents [[2--4]] 2 to 4.

On page 7, please amend the text between lines 5 and 32 as follows:

The LC films are deposited by known methods described in detail in patents [[2, 3]] 2 and 3, based on the squeegee, die, and roller techniques. In these technologies, the process of LC solution deposition is accompanied by orientation of the molecules under the action of viscous forces developed in the course of deposition due to stretching of the liquid layer, shifting one layer relative to another, or specially treating the surface to render it anisotropic. For depositing liquid crystals occurring in the solid state under usual ambient conditions, the compounds are preliminarily transformed into an LC state by heating to the melting temperature. All these techniques can be used to obtain elements with different thicknesses. For this purpose, a stepped, wedge-shaped, or other relief with depth variations within 1--15 μm is formed on the surface of the application device. In order to obtain a mosaic structure with differential orientation of optical axes in the anisotropic layer, the application device (die or squeegee) must perform reciprocating motions in the direction perpendicular to the direction of motion of the base to which the anisotropic film is applied. In the case of roller technology, this is achieved by producing a relief of elongated grooves, making certain angle with the cylinder generating line, on the surface of rollers. These grooves render the roller surface anisotropic and provide the orientation of molecules in a desired direction.

On page 11, please amend the text between lines 22 and 30 as follows:

1. JP No. 4-307300(A), October 29, 1992 [29.10.1992, Int C15 B44 CI/28, B44 F1/06. Prototype.]
2. Appl. PCT WO 94/28073; Published December 8, 1994 [C09B 31/147, 31/30; Publ. 08.12.94.]
3. US Pat. No. 2,400,877, [CI 350-155,] May 28, 1946.
4. JP No. 1-183602(A), July 21, 1989 [Int. CI5 G 02B5/30, G 02B1/08, 21.07.1989.]
5. US Pat. No. 5,247,377, September 21, 1993 [G 02F 1/13, Sep. 21, 1993.]
6. SU No. 1015326, January 25, 1982 [G 02 B 5/30, 25.01.82.]

In the Claims:

1 ~~11.~~ (Amended) A decorative material, comprising:

two polarizers, wherein each polarizer has a controlled direction of polarization axis; and

at least one phase-shifting plate placed between the polarizers, wherein the phase-shifting plate represents a continuous layer of an optically anisotropic material containing regions differing by optical properties [value of phase shift and/or direction of fast optical axis].

2 ~~12.~~ (Unchanged) The decorative material of claim ~~11~~ 1, wherein the optically anisotropic material represents a molecularly oriented film deposited onto an optically isotropic base.

3 ~~13.~~ (Unchanged) A decorative material, comprising:

two polarizers, wherein each polarizer has a controlled direction of polarization axis, and at least one of the polarizers contains several elements differing by directions of their polarization axes; and

at least one phase-shifting plate placed between the polarizers, wherein the phase-shifting plate represents a continuous layer of a homogeneous optical anisotropic material.

4 ~~14.~~ (Unchanged) The decorative material of claim ~~11~~ 1 or ~~13~~ 3, wherein the anisotropic film is placed in a transparent vessel filled with a transparent or weakly colored liquid medium, and the polarizers are placed in the inner surface of the vessel.

5 ~~15.~~ (Unchanged) The decorative material of claim ~~11~~ 1 or ~~13~~ 3, wherein the anisotropic film is placed in a transparent vessel filled with a transparent or weakly colored liquid medium, and the polarizers are placed in the outer surface of the vessel.

6 ~~16.~~ (Unchanged) The decorative material of claim ~~13~~ 3, wherein at least one of the polarizers represents a film of molecularly oriented organic substance deposited immediately onto an optically anisotropic material.

17. (Unchanged) The decorative material of claim ~~13~~ 3, wherein at least one of the polarizers represents a film of molecularly oriented organic substance deposited onto a transparent sublayer predeposited onto a surface of an anisotropic material.

18. (Unchanged) The decorative material of claim ~~16~~ 6 or ~~17~~ 7, wherein the molecularly oriented film represents a layer of an organic substance formed from lyotropic liquid crystals.

19. (Amended) The decorative material of claim ~~16~~ 6 or ~~17~~ 7, wherein the molecularly oriented film represents a layer of an organic substance formed from thermotropic liquid crystals having a temperature of transition from solid to liquid crystal [LC] state above the ambient temperature.

~~20~~ 13. (Amended) A decorative material, comprising

a polarizer having a controlled direction of polarization axis;

a reflecting layer; and

at least one phase-shifting plate placed between the polarizer and the reflecting layer, wherein the phase-shifting plate represents a continuous layer of an optically anisotropic material containing regions differing by optical properties [value of phase shift and/or direction of fast optical axis].

~~21~~ 10. (New) The decorative material of claim ~~11~~ 1, wherein the continuous layer of the optically anisotropic material contains regions differing by value of phase shift.

~~22~~ 11. (New) The decorative material of claim ~~11~~ 1, wherein the continuous layer of the optically anisotropic material contains regions differing by direction of optical axis.

~~23~~ 12. (New) The decorative material of claim ~~11~~ 1, wherein the continuous layer of the optically anisotropic material contains regions differing by value of phase shift and direction of optical axis.

~~24~~ 14. (New) The decorative material of claim ~~20~~ 13, wherein the continuous layer of the optically anisotropic material contains regions differing by value of phase shift.

~~25~~ 15. (New) The decorative material of claim ~~20~~ 13, wherein the continuous layer of the optically anisotropic material contains regions differing by direction of optical axis.

~~26~~ 16. (New) The decorative material of claim ~~20~~ 13, wherein the continuous layer of the optically anisotropic material contains regions differing by value of phase shift and direction of optical axis.

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